CLAIMS

What is claimed is:

1. An insert ring for a process chamber, comprising:

a ring body defining a central ring opening; and

an annular step provided on said ring body and spaced-apart from said central ring opening.

2. The insert ring of claim 1 wherein said ring body comprises silicon.

3. The insert ring of claim 1 wherein said ring body has a ring body thickness of about 3.5 mm.

4. The insert ring of claim 3 wherein said ring body comprises silicon.

5. The insert ring of claim 1 wherein said step has a step thickness of about 1.5 mm.

6. The insert ring of claim 1 wherein said process chamber comprises etching process chamber.

7. The insert ring of claim 5 wherein said ring body has a ring body thickness of about 3.5 mm.

8. The insert ring of claim 7 wherein said ring body comprises silicon.

9. An insert ring assembly for a process chamber, comprising:

a wafer support for supporting a wafer;

an insert ring encircling said wafer support, said insert ring comprising a ring body defining a central ring opening and an annular step provided on said ring body and spaced-apart from said central ring opening; and

a generally perpendicular flow space defined between said insert ring and said wafer support.

10. The insert ring assembly of claim 9 wherein said ring body comprises silicon.

11. The insert ring assembly of claim 9 wherein said ring body has a ring body thickness of about 3.5 mm and said step has a step thickness of about 1.5 mm.

12. The insert ring of claim 9 wherein said process chamber comprises etching process chamber.

13. The insert ring assembly of claim 9 further comprising a shadow ring encircling said insert ring.

14. The insert ring assembly of claim 13 wherein said ring body comprises silicon.

15. The insert ring assembly of claim 13 wherein said ring body has a ring body thickness of about 3.5 mm and said step has a step thickness of about 1.5 mm.

16. The insert ring assembly of claim 15 wherein said ring body comprises silicon.

17. A method of preventing formation of polymer residues on an inner surface of an insert ring encircling a substrate support during processing of a substrate on the substrate support, comprising the step of:

providing a generally perpendicular flow space between said insert ring and said substrate support by providing a generally step-shaped cross-sectional profile to said insert ring.

18. The method of claim 17 wherein said insert ring comprises a ring body defining a central ring opening and an annular step provided on said ring body and spaced-apart from said central ring opening.

19. The method of claim 17 wherein said insert ring comprises quartz.

20. The method of claim 19 wherein said insert ring comprises a ring body defining a central ring opening and an annular step provided on said ring body and spaced-apart from said central ring opening.